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Topics in Enzyme and Fermentation Biotechnology, Vol. 1

Edited by A. Wiseman

Ellis Horwood; Chichester, 1977

191 pages. £10.50, \$19.95

Biotechnology exploits the great and unique powers of living cells to perform chemical transformations under mild conditions, to utilize renewable resources and to abate environmental pollution. The field of biotechnology lies between biology, particularly microbiology, chemistry and engineering or physics. Like any newcomer in science, especially if it is interdisciplinary, the subject has to fight for a place in the establishment. It is still orthodox to think that biology consists of botany and zoology; for instance, university library catalogues still do not recognise microbiology.

The close forerunners of this book of reviews are *Advances in Applied Microbiology*, *Progress in Industrial Microbiology* and *Advances in Biochemical Engineering*. This latest contribution shows that there is justification for another review source.

J. Melling discusses continuous flow culture and some significant advances in knowledge of environmental control of microbial behaviour. A. Thomas and M. A. Winkler present a good systematic study

of theory and practice in foam separation of biological materials. G. T. Banks considers the problems of defining the parameters which control oxygen transfer from gas to liquids, especially in non-Newtonian fluids. M. O. Moss discusses enzymic transformations of penicillins and cephalosporins from the point of view of antibiotic design.

Developments in biotechnology can have great commercial importance and this is reflected in the article on patents by F. S. M. Grylls. His article conveys the principles and the spirit of patent law with great style so that the dry legalistic bones are made to live.

C. Bucke covers comprehensively the glucose isomerases. Knowledge of cytochrome *P*-450 and its industrial importance are lucidly presented by A. Wiseman.

The subjects are covered broadly and in depth with extensive bibliographies. It is to be recommended as an authoritative source book.

S. J. Pirt

The Urea Cycle

Edited by S. Grisolia, R. Baguena and F. Mayor

J. Wiley and Sons; New York, Sydney, London, Toronto, 1976

xx + 579 pages. £22.00, \$37.50

Books and reviews devoted to all aspects of Sir Hans Krebs' most famous discovery, the tricarboxylic acid cycle, abound. In contrast, detailed accounts of the urea cycle, Sir Hans' other and earlier cycle, are much less common. This book reports the proceedings of a conference held in Valencia in

1975 which is described in the preface as a gathering of Sir Hans' urea cycle 'family'. The 'family' is a large one and on the evidence of the articles included has interests ranging from the purely chemical through biochemical investigations concerning the enzymology and control of the urea cycle and related pathways

to clinical studies both on disease states involving deficiencies of one or more of the urea cycle enzymes and also on the use of urea and related compounds such as cyanate and carbamyl-phosphate. If the discussions reproduced in this book are any guide, it is also a lively 'family' although not wholly a united one; there are several junctures at which one is led to wonder whether the contestants came to blows (either real or metaphorical) after the exchanges which are recorded! Or possibly the printed word exaggerates the reality.

As with the published proceedings of many symposia it is somewhat hard to assess the likely range of appeal of this book. It will undoubtedly be a useful source for those working in, or wishing to review, this area of metabolism. The net is in fact spread somewhat wider than the urea cycle itself and includes as one might expect considerable discussion of ammonia metabolism as for example in articles on glutamate dehydrogenases and their control and on liver ammonia levels and hepatic coma. Glutamine metabolism is also considered but it is perhaps a curious omission that direct consideration of the properties of glutamine synthetase and glutaminase are omitted. The discussions include another airing of the Krebs/Chappell dialogue regarding the equilibrium status of glutamate dehydrogenase in the liver but

without resolution of this seeming paradox. Is it too much to hope that some measure of agreement can be reached on this issue in the near future? Some less obviously related inclusions such as for example that on hepatic histidine metabolism are explicable on the basis of their relationship to the current work of Sir Hans Krebs' colleagues rather than on their relevance to the mainstream of the symposium. This is in concert with the construction of the symposium and its published proceedings as a tribute to Sir Hans by illustrating the breadth and depth of the work which has been inspired by his first cyclic proposal. In this respect the symposium was clearly most successful and in it also lies, I feel, the chief value of this book. Being now in possession of so much knowledge, which grows at an ever increasing rate, there is a tendency to lose sight of the historical roots of the subject and in particular to fail to impart a sense of this history to students. Since many of those responsible for making this history are still alive and active in biochemical research it is important that we do take the opportunity to obtain this history at first hand. One hopes that such material will be available more widely and this book represents a contribution to this end.

M. C. Scrutton

Peptides: Chemistry, Structure and Biology

Proceedings of the Fourth American Peptide Symposium

Edited by R. Walter and J. Meienhofer

Ann Arbor Science Publishers; Ann Arbor, 1975

xvii + 1053 pages. £20.50, \$37.95

This volume contains the papers presented at the Fourth American Peptide Symposium, held in New York in June 1975. Being one-third larger than the account of the previous American Symposium would indicate that interest in peptides has not declined during the intervening three years. It is perhaps unfortunate that virtually no discussion material has been included. Admittedly it is often the case

that impromptu questions and comments after a paper are not always the best thought out but frequently a point of general interest will emerge. To benefit from this aspect of a meeting and from discussion generated by but outside the formal programme is the good fortune of the participants. The rest of us must glean what we can from the book. This book however enables us to do more than glean